



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 11306/1
Permit Holder:	Shire of Wyndham East Kimberley and Coventry Machine Works Pty Ltd Trustee for Clacy JEMS Family Trust TIA Coventry Machine Works
Duration of Permit:	From 20 June 2026 to 20 June 2031

The permit holder is authorised to *clear native vegetation* subject to the following conditions of this permit.

PART I – CLEARING AUTHORISED

1. Clearing authorised (purpose)

The permit holder is authorised to *clear native vegetation* for the purpose of weed and *Typha spp.* management.

2. Land on which clearing is to be done

Refer to Table 1 in Schedule 1.

3. Clearing authorised

The permit holder must not *clear* more than 50 hectares of *native vegetation* within the area cross-hatched yellow in Figure 1 and 2 of Schedule 2.

4. Clearing restricted

The permit holder shall not *clear* native vegetation within the area cross-hatched red in Figure 1 of Schedule 3.

5. Period during which clearing is authorised

The permit holder must not *clear* any *native vegetation* after 20 April 2031.

PART II – MANAGEMENT CONDITIONS

6. Avoid, minimise, and reduce impacts and extent of clearing

In determining the *native vegetation* authorised to be *cleared* under this permit, the permit holder must apply the following principles, set out in descending order of preference:

- (a) avoid the *clearing* of *native vegetation*;
- (b) minimise the amount of *native vegetation* to be *cleared*; and
- (c) reduce the impact of *clearing* on any environmental value.

7. Weed management

When undertaking any *clearing* authorised under this permit, the permit holder must take the following measures to minimise the risk of introduction and spread of *weeds*:

- (a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be *cleared*;
- (b) ensure that no known *weed*-affected soil, *mulch*, *fill*, or other material is brought into the area to be *cleared*; and
- (c) restrict the movement of machines and other vehicles to the limits of the areas to be *cleared*.

8. Fauna Management

- (a) Prior to undertaking any *clearing* authorised under this permit, the permit holder must inspect the area authorised to be *cleared* under this permit prior to works commencing and for the duration of *clearing* for any native fauna that may be present.
- (b) Where fauna have been identified under *condition* 8(a), works must cease until the fauna have escaped into adjacent habitat ahead of the *clearing* activity or translocated into *native vegetation*.

9. Directional clearing

The permit holder must:

- (a) conduct *clearing* activities authorised under this permit in a slow, progressive manner, in one direction, towards adjacent *native vegetation*; and
- (b) allow a reasonable time for fauna present within the area being *cleared* to move into adjacent *native vegetation* ahead of the *clearing* activity.

PART III - RECORD KEEPING AND REPORTING

10. Records that must be kept

The permit holder must maintain records relating to the listed relevant matters in accordance with the specifications detailed in Table 1.

Table 1: Records that must be kept

No.	Relevant matter	Specifications
1.	In relation to the authorised <i>clearing</i> activities generally	<ul style="list-style-type: none"> (a) the species composition, structure, and density of the <i>cleared</i> area; (b) the location where the <i>clearing</i> occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 2020 (GDA2020), expressing the geographical coordinates in Eastings and Northings; (c) the date that the area was <i>cleared</i>; (d) the size of the area <i>cleared</i> (in hectares); (e) actions taken to avoid, minimise, and reduce the impacts and extent of <i>clearing</i> in accordance with <i>condition 6</i>; (f) actions taken to minimise the risk of the introduction and spread of <i>weeds</i> in accordance with <i>condition 7</i>; and (g) fauna management actions undertaken in accordance with <i>condition 8</i>.

11. Reporting

The permit holder must provide to the *CEO* the records required under *condition 10* of this permit when requested by the *CEO*.

DEFINITIONS

In this permit, the terms in Table 2 have the meanings defined.

Table 2: Definitions

Term	Definition
CEO	Chief Executive Officer of the department responsible for the administration of the clearing provisions under the <i>Environmental Protection Act 1986</i> .
clearing/clear/cleared	has the meaning given under section 3(1) of the EP Act.
condition	a condition to which this clearing permit is subject under section 51H of the EP Act.
department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
EP Act	<i>Environmental Protection Act 1986</i> (WA)
fill	means material used to increase the ground level, or to fill a depression.
mulch	means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation.
native vegetation	has the meaning given under section 3(1) and section 51A of the EP Act.
weeds	means any plant – <ul style="list-style-type: none"> (a) that is a declared pest under section 22 of the <i>Biosecurity and</i>

Term	Definition
	<p><i>Agriculture Management Act 2007</i>; or</p> <p>(b) published in a Department of Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or</p> <p>(c) not indigenous to the area concerned.</p>

END OF CONDITIONS


C Robertson
27.05.2026
12.48PM

Caron Robertson
MANAGER
NATIVE VEGETATION REGULATION

*Officer delegated under Section 20
of the Environmental Protection Act 1986*

27 May 2026

Schedule 1

Table 1: Land on which clearing is to be done

Property	Locality
Unallocated Crown Land (PIN 638581)	Kununurra
(R 41812) Lot 300 on Deposited Plan 210825 (PIN 638583)	Kununurra
Unallocated Crown Land (PIN 638899)	Kununurra
(R 41812) Lot 501 on Deposited Plan 57127 (PIN 11689751)	Kununurra
(R 50438) Lot 5555 on Deposited Plan 407044 (PIN 12199454)	Kununurra
(R 50438) Lot 5555 on Deposited Plan 407044 (PIN 12199455)	Kununurra
(R 50438) Lot 5556 on Deposited Plan 407044 (PIN 12199456)	Kununurra
(R 50425) Lot 500 on Deposited Plan 413766 (PIN 12312482)	Kununurra
Lot 502 on Deposited Plan 417422 (PIN 12555284)	Kununurra
(R 37380) Lot 651 on Deposited Plan 426667 (PIN 12714230)	Kununurra
Road Reserve (PIN 12627798)	Kununurra
Water (PIN 1318636)	Kununurra

Schedule 2

The boundary of the areas authorised to be cleared are shown in the maps below (Figures 1 and 2).

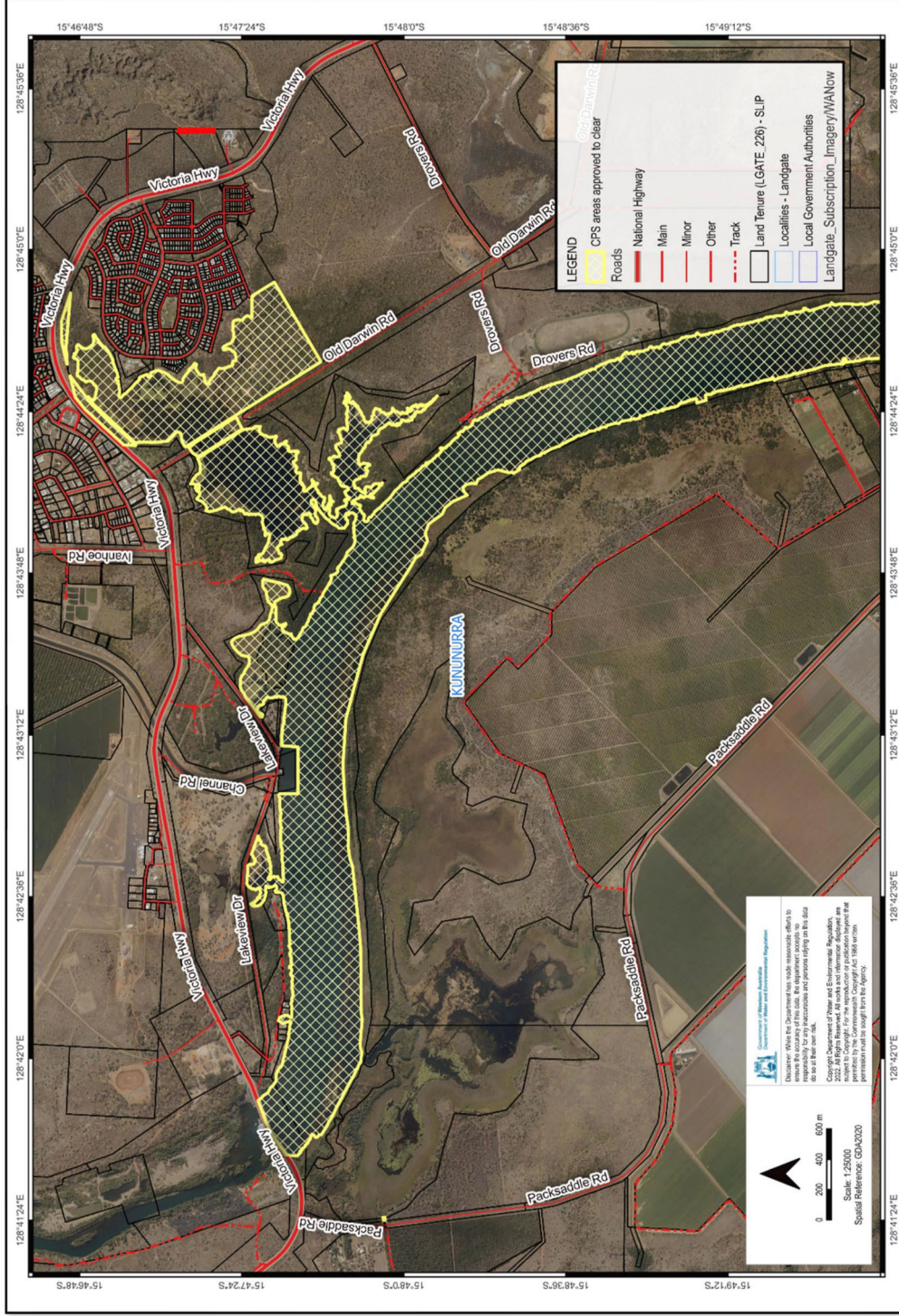


Figure 1: Map of the boundary of the area within which clearing may occur

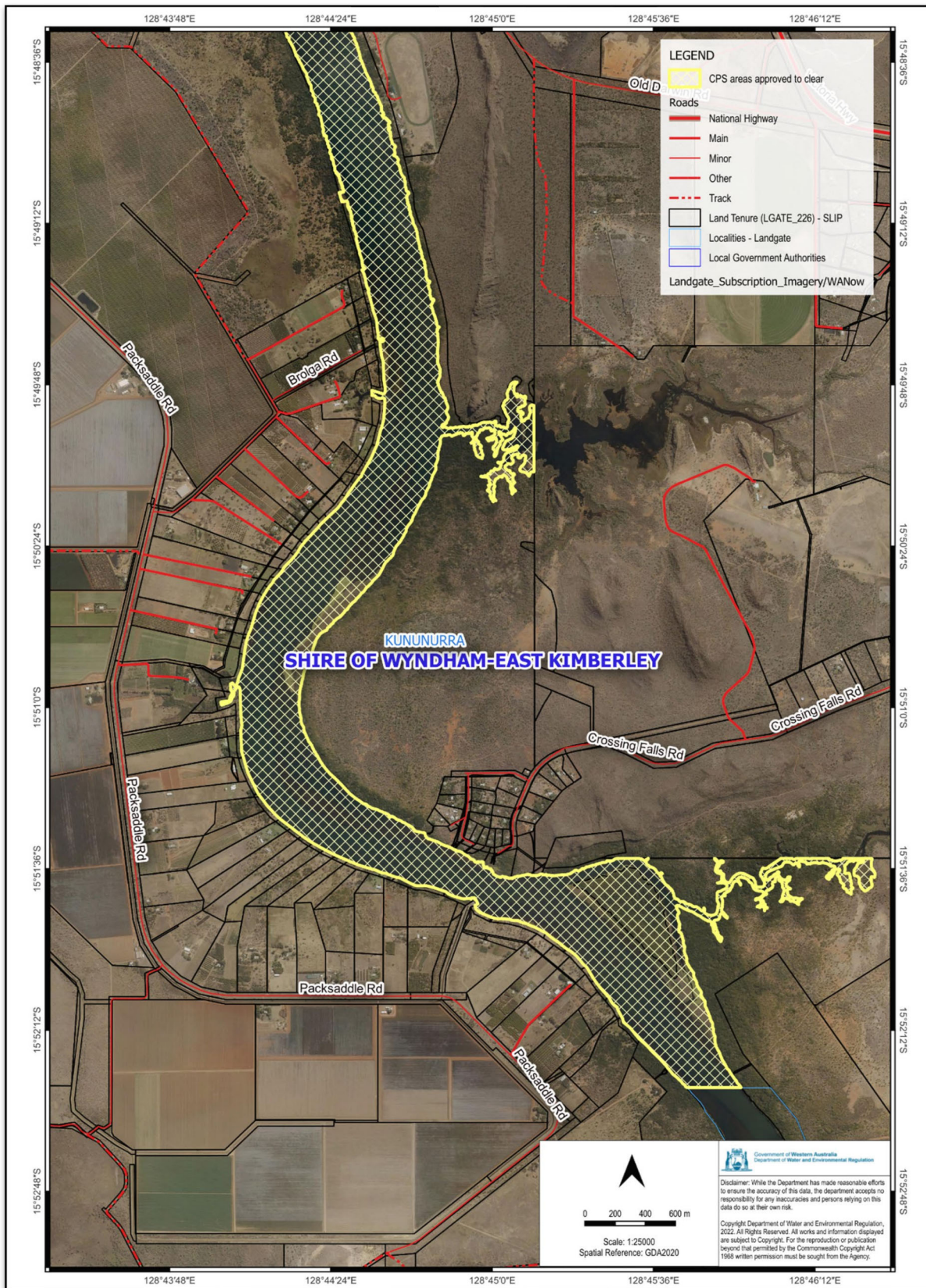


Figure 2: Map of the boundary of the area within which clearing may occur

Schedule 3

The boundary of the areas where clearing must not be undertaken is shown in the map below.

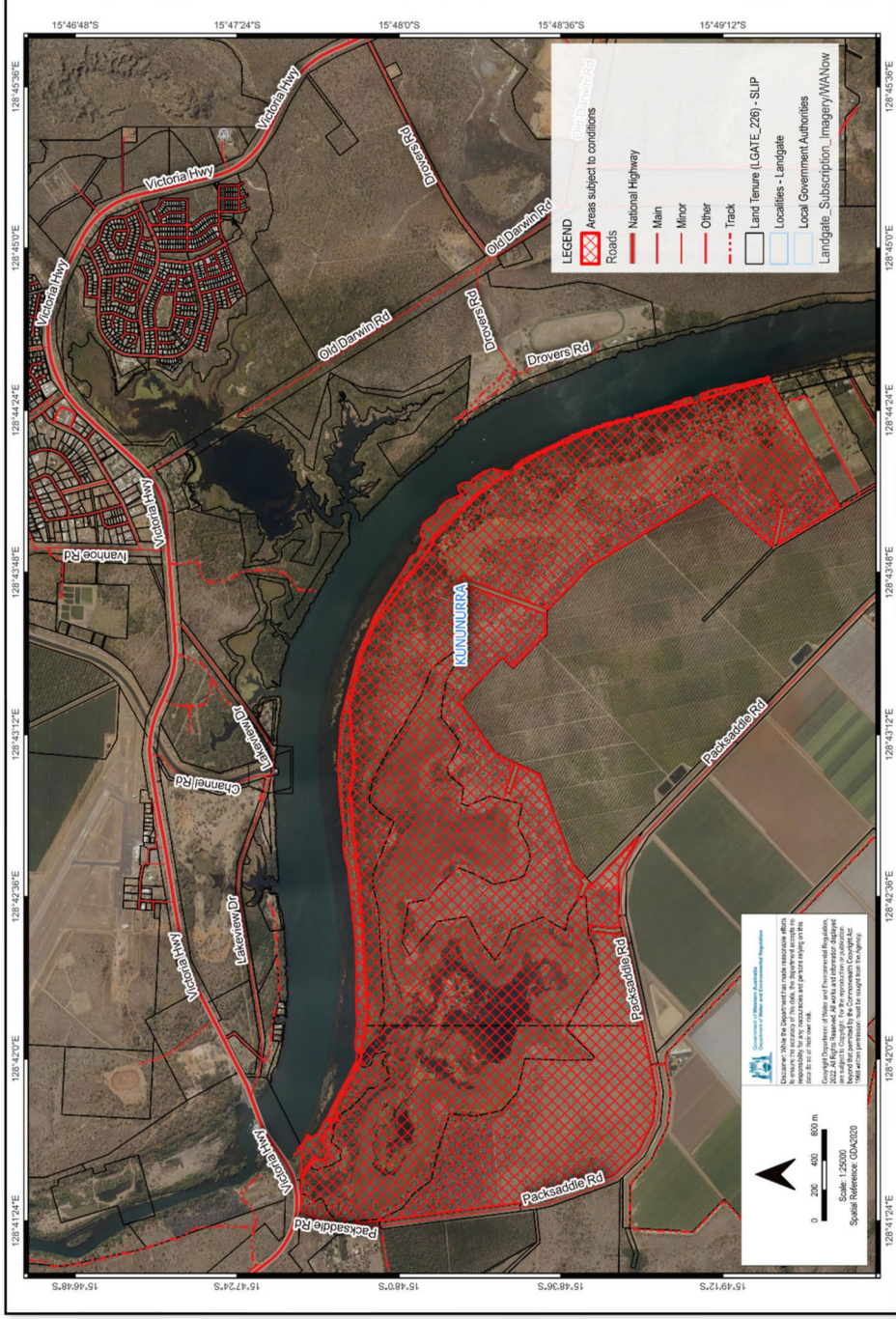


Figure 1: Map of the boundary of the area within which clearing activities must not take place



Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 11306/1
Permit type:	Purpose permit
Applicant name:	Shire of Wyndham East Kimberley and Coventry Machine Works
Application received:	24 October 2025
Application area:	50 hectares of native vegetation with a 736.74 hectare footprint (revised)
Purpose of clearing:	Weed and <i>Typha domingensis</i> management
Method of clearing:	Mechanical clearing
Property:	Within various land parcels
Location (LGA area/s):	Shire of Wyndham-East Kimberley
Localities (suburb/s):	Kununurra

1.2. Description of clearing activities

This application is for the targeted removal and regular maintenance of the robust, overgrown, native, herbaceous plant, *Typha domingensis* (also known as cumbungi in the area, however, will be referred to as *Typha* for the purpose of this report), which is distributed across several areas in the foreshore and surrounds of Lake Kununurra, including Lily Creek Lagoon and areas of the Ord River adjacent to tourism and recreational facilities, boat ramps. The removal and maintenance of *Typha* is to ensure safe and clear access to residents and mosquito control within the area (see Figure 1 and 2, Section 1.5). *Typha*'s prolific growth represents a problem in areas where there is a need for foreshore access for recreational activities or tourism development (Sterling Environmental, 2026).

The Shire of Wyndham-East Kimberley (the Shire), in collaboration with Coventry Machine Works (Coventry), (hereafter referred to as the applicants) aim to reduce incidence of citizen management through a coordinated and controlled effort. The applicants are proposing to utilise the Truxor (Australian Catchment Management, 2026), an aquatic weed harvester, which has proven to be effective in the removal of *Typha* when previously used in the East Kimberley (see Appendix E: Figure 5 to 7) (Hydroscape Environmental, 2025).

The application was revised during the assessment process, in response to advice received from the Department of Biodiversity, Conservation and Attractions (DBCA), regarding clearing of *Typha* taking place within the Darram Conservation Park. The changes included:

- Removal of Darram Conservation Park from the application footprint, except for three locations along the western bank of the Ord River and the surface water abstraction sump associated with Water Licence 171562/169488.

1.3. Decision on application

Decision:	Granted
Decision date:	25 May 2026
Decision area:	50 hectares of native vegetation within a 736.74 hectare footprint (revised), as depicted in Section 1.5, below.

1.4. Reasons for decision

This clearing permit application was submitted, accepted, assessed and determined in accordance with sections 51E and 51O of the *Environmental Protection Act 1986* (EP Act). The Department of Water and Environmental Regulation (DWER) advertised the application for 21 days and no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (see Appendix B), relevant datasets (see Appendix F.1.), the findings of a *Draft Vegetation Management Plan* (VMP) (Sterling Environmental, 2026) (see Appendix E), the clearing principles set out in Schedule 5 of the EP Act (see Appendix C), relevant planning instruments and any other matters considered relevant to the assessment (see Section 3). The Delegated Officer took into consideration the purpose of clearing is to manage and control the spread of *Typha* species affecting the functionality of wetlands and waterways. The Delegated Officer also took into consideration:

- the Shire's commitment to the National Action Plan for Salinity and Water Quality (NAP) who are funding the project to produce the vegetation management plan (VMP) and action (VMP).
- the significance of the wetlands, including Lake Kununurra and Lily Creek Lagoon's listing under the Convention on Wetlands of International Importance (Ramsar Convention).
- that Lake Kununurra and Lily Creek Lagoon, including the foreshore areas are used extensively for a variety of industry purposes and recreational activities, and directly support a thriving tourism industry.
- that water from Lake Kununurra is used to irrigate farms via Stage 1 of the Ord Irrigation Scheme and the M2 Supply Channel Project has expanded irrigation infrastructure to support agriculture on approximately 50,000 hectares of black soil plains, including the Weaver, Keep River, and Knox Creek Plains.
- the water from Lake Kununurra and Lily Creek Lagoon recharges the bores from which Kununurra's potable water is supplied.
- the waterbodies and their environs are important to the local First Nation's People, highly valued by the community (both residents and visitors alike), and contain a number of significant Aboriginal Cultural Heritage Areas.
- the natural flushing of the river system has been altered since the damming of the Ord River, and as a result, *Typha* grows back in abundance following every wet season experienced in the East Kimberley.

The assessment identified that the proposed clearing may result in:

- the potential disturbance of 50 hectares of native vegetation that is suitable habitat for several conservation significant fauna species, including threatened and migratory fauna species associated with the Ramsar wetland system
- the potential introduction and spread of weeds into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its associated habitat values.

After consideration of the available information, as well as the applicant's minimisation and mitigation measures (see Section 3.1), the Delegated Officer determined the proposed clearing can be minimised and managed to be unlikely lead to appreciable land degradation or significant impacts to conservation significant fauna and flora. The applicant has suitably demonstrated avoidance and minimisation measures.

The Delegated Officer decided to grant a clearing permit subject to conditions to:

- avoid, minimise to reduce the impacts and extent of clearing;
- take hygiene steps to minimise the risk of the introduction and spread of weeds;
- undertake slow, progressive one directional clearing to allow fauna to move into adjacent habitat ahead of the clearing activity; and
- pre-clearing site inspections prior to works commencing and ongoing during works for any fauna that may be present. If found and not able to escape to adjacent habitat, the applicants are to cease works until the identified fauna has been translocated.

1.5. Site map

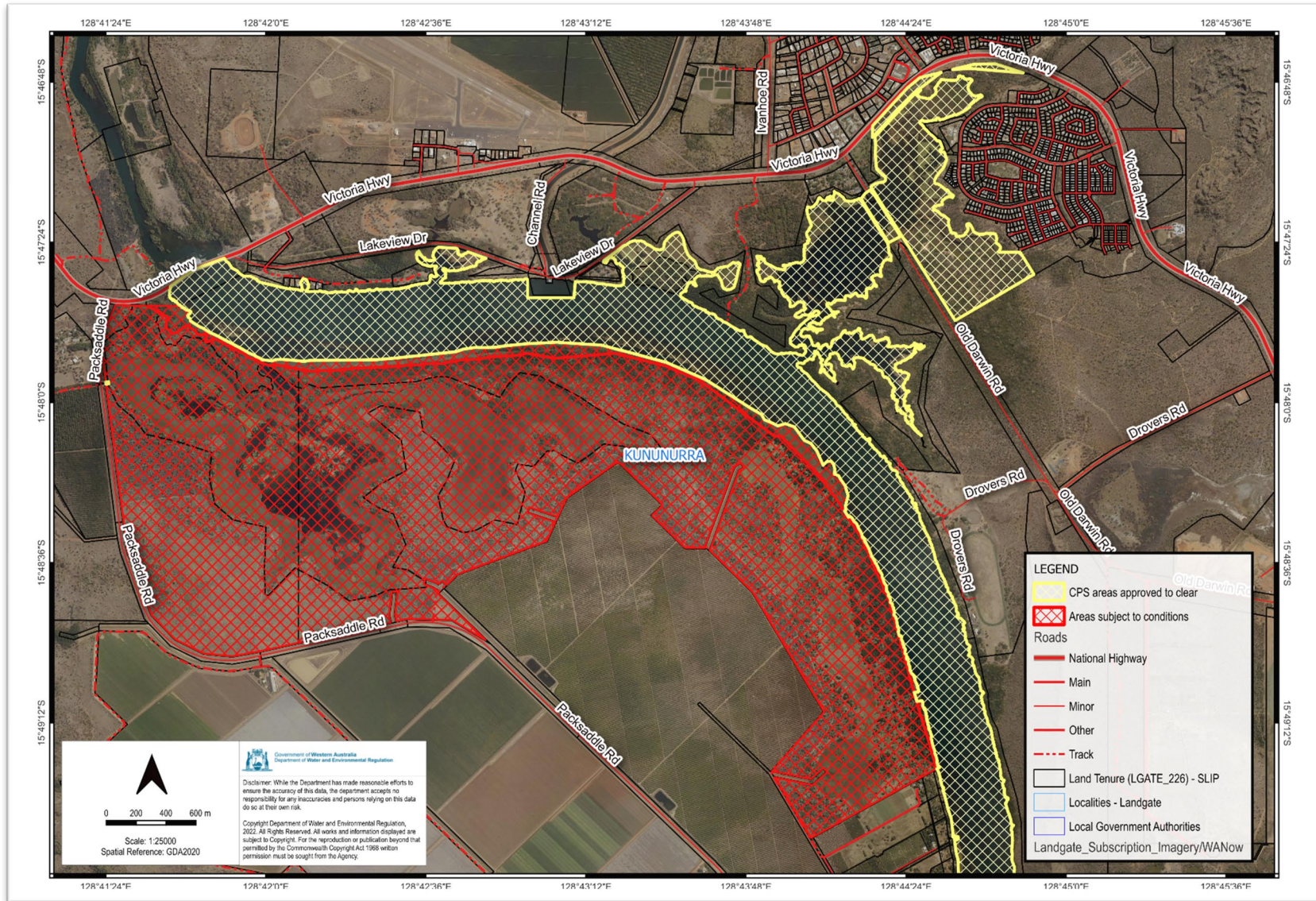


Figure 1: Map of the application area. The areas crosshatched yellow indicate the areas authorised to be cleared under the granted clearing permit. The areas cross-hatched red indicate areas within which clearing activities must not be undertaken.

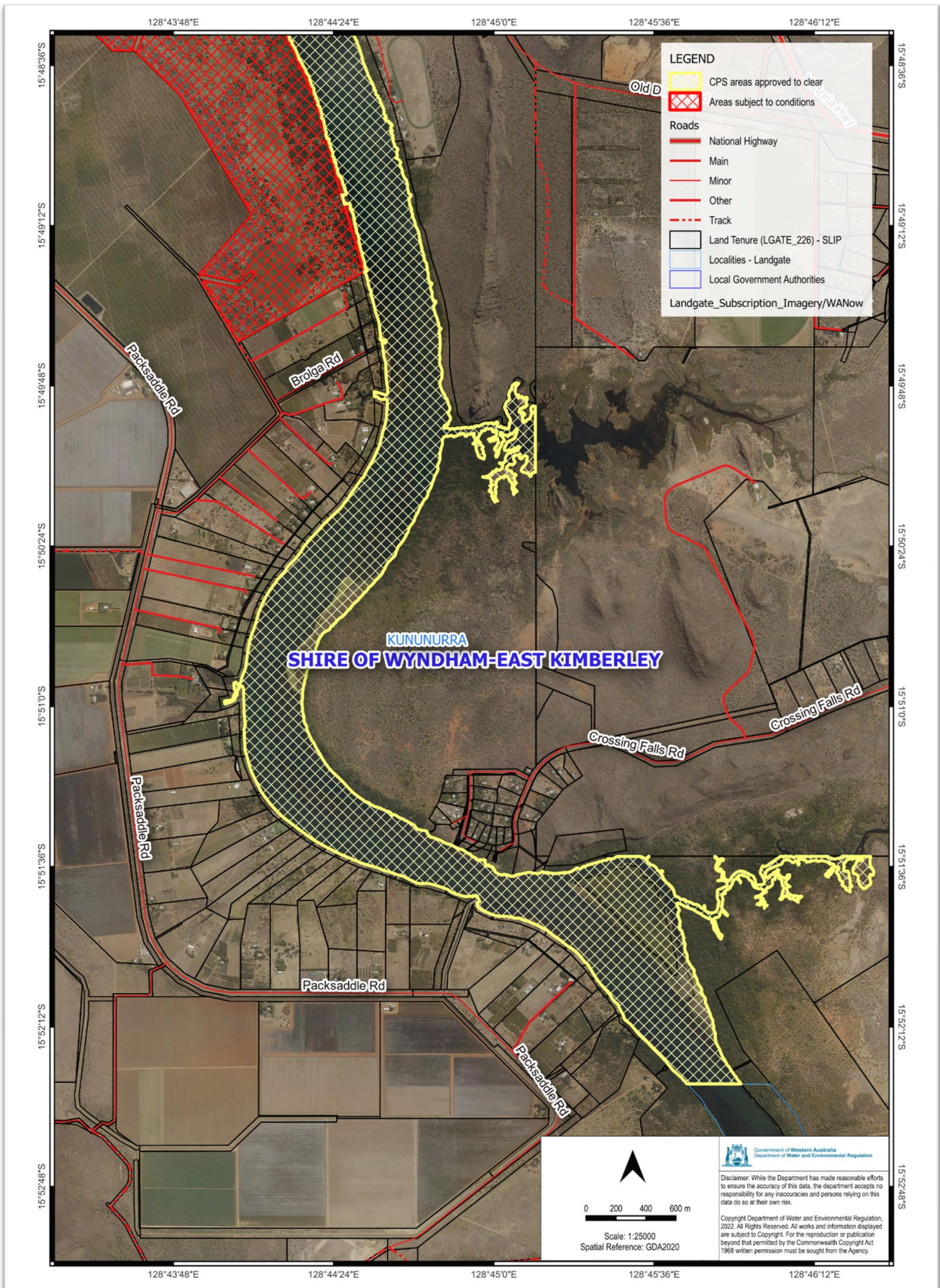


Figure 2: Map of the application area. The areas crosshatched yellow indicate the areas authorised to be cleared under the granted clearing permit. The areas cross-hatched red indicate areas within which clearing activities must not be undertaken.

2 Legislative context

The clearing of native vegetation in Western Australia is regulated under the EP Act and the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* (Clearing Regulations).

In addition to the matters considered in accordance with section 51O of the EP Act (see Section 1.4), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

- the precautionary principle
- the principle of intergenerational equity
- the principle of the conservation of biological diversity and ecological integrity.

Other legislation of relevance for this assessment include:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Conservation and Land Management Act 1984* (WA) (CALM Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2013)
- *Procedure: Native vegetation clearing permits* (DWER, October 2019)

3 Detailed assessment of application

3.1. Avoidance and mitigation measures

Evidence was submitted by the applicant via the VMP (Sterling Environmental, 2026), demonstrating that measures of avoidance, minimisation and mitigation have been considered for the proposed clearing.

Avoidance

The VMP establishes clear principles that prioritise retention of native vegetation and explicitly discourage unnecessary clearing:

- Large-scale clearing is to be avoided, particularly where vegetation (including weeds) is performing environmental functions, unless supported by a long-term rehabilitation and follow-up plan.
- Native vegetation is recognised as being protected under conservation legislation, and any removal requires approval.
- Vegetation removal is to be strategic, limited, and purpose-driven, rather than for general access or amenity.

The VMP uses Vegetation Management Units (VMUs) to strictly control where clearing may or may not occur.

Riparian VMUs

- It is recommended that the riparian vegetation remain intact, ensuring the zone is in good condition, rather than removed.
- Clearing of Riparian VMUs is strongly discouraged due to the potential for:
 - increased erosion risk;
 - increased surface water, sediment and nutrient input into waterbody;
 - reduced habitat; and
 - increased weed invasion.
- Riparian vegetation and *Typha* around drainage outlets will be retained unless it can be shown to be contributing to upstream flooding.

Minimisation

Where clearing cannot be avoided (e.g. access or recreation), the VMP imposes quantitative limits (Sterling Environmental, 2026):

- *Typha* removal is limited to 100 metre sections, with a minimum 20 metre buffer retained between cleared sections.
- Clearing of *Typha* will be limited to:
 - identified recreation and amenity areas.
 - locations identified as having experienced large scale increases in cumbungi growth.
- *Typha* and riparian vegetation retained around drainage outlets unless contributing to upstream flooding.

These measures explicitly minimise the spatial extent of clearing.

Mitigation

The VMP consistently promotes management methods that avoid clearing altogether, including:

- Weed control and ecological restoration rather than vegetation removal.
- Use of mechanical harvesting for aquatic vegetation (preferred over excavation or chemical methods) to reduce physical disturbance.
- Avoidance of chemical use in or near water wherever possible.

Where clearing is unavoidable, the VMP requires:

- Immediate revegetation of banks and disturbed areas using small local native sedges and riparian tree species.
- Rehabilitation to occur concurrently with or following clearing, not as a later optional activity.
- Retention of mature native trees and planning for replacement where removal is unavoidable.

To prevent incremental or unauthorised clearing, the VMP recommends:

- Establishment of photo monitoring points and vegetation quadrats to track vegetation condition and detect unnecessary decline.
- Annual review of management actions to ensure clearing has not exceeded what is necessary.

The Delegated Officer was satisfied that the applicant has made a reasonable effort to avoid and minimise potential impacts of the proposed clearing on environmental values.

3.2. Assessment of impacts on environmental values

In assessing the application, the Delegated Officer has had regard for the site characteristics (see Appendix B) and the extent to which the impacts of the proposed clearing present a risk to biological, conservation, or land and water resource values.

The assessment against the clearing principles (see Appendix C) identified that the impacts of the proposed clearing present a risk to biological values (fauna and vegetation) and land and water resources. The consideration of these impacts, and the extent to which they can be managed through conditions applied in line with sections 51H and 51I of the EP Act, is set out below.

3.2.1. Biological values (fauna) - Clearing Principles (a) and (b)

Assessment

According to available databases, 62 conservation significant fauna species are recorded within a 50 kilometre radius of the application area (hereafter referred to as the local area). Of the conservation significant fauna species recorded within the local area, the following fauna species are likely to regularly utilise *Typha*-dominated habitats for foraging, shelter, breeding, and/or roosting, based on habitat preferences, many of which are threatened and migratory fauna species associated with the Ramsar wetland system of Lake Argyle and Lake Kununurra:

- *Actitis hypoleucos* (common sandpiper) (MI)
- *Botaurus dubius* (Australian little bittern) (P4)
- *Botaurus poiciloptilus* (Australasian bittern) (EN/MI)
- *Gallinago megala* (Swinhoe's snipe) (MI)
- *Hydromys chrysogaster* (water-rat, rakali) (P4)
- *Motacilla flava* (yellow wagtail) (MI)
- *Plegadis falcinellus* (Glossy ibis) (MI)
- *Rostratula australis* (Australian painted snipe) (EN/MI)
- *Spatula querquedula* (Garganey) (MI)
- *Tringa glareola* (wood sandpiper) (MI)
- *Tringa nebularia* (common greenshank) (MI)
- *Tringa stagnatilis* (marsh sandpiper) (MI)
- *Crocodylus johnstoni* (freshwater crocodile) (OS)

Migratory Birds (MI)

According to available databases, there are 31 records of bird species in the local area that are listed as Migratory under the BC Act. The application footprint and *Typha* stands proposed to be cleared, contain habitat features that are known to be utilised by eight of these migratory bird species (see table in Appendix B.2.). These species do not depend exclusively on foraging, nesting, roosting and taking refuge in habitats prone to *Typha* infestation, however, they may be present at the time of clearing. According to a study conducted in the area (Hale and Morgan,

2010) There are limited waterbird breeding records, but anecdotal evidence that Lake Kununurra was significant as a breeding site. Conditions on the permit of pre-clearance fauna inspections and directional clearing will mitigate potential impacts to individual migratory birds that may be present at the time of clearing.

Other conservation significant bird species

Botaurus poiciloptilus (Australasian bittern) (EN)

Australasian bittern occurs mainly in freshwater wetlands and, rarely, in estuaries or tidal wetlands (Marchant & Higgins, 1990). It often forages at the edges of pools or waterways, or from platforms or mats of vegetation over deep water. It favours permanent and seasonal freshwater habitats, particularly those dominated by sedges, rushes and reeds. Australasian bittern nests adjacent to relatively deep, densely vegetated freshwater swamps and pools, building its nests under dense cover over shallow water (DCCEEW, 2020). They favour permanent and seasonal freshwater habitats, particularly those dominated by sedges, rushes and/or reeds (e.g. *Phragmites*, *Cyperus*, *Eleocharis*, *Juncus*, *Typha*, *Baumea*, *Bolboschoenus*) or cutting grass (*Gahnia*) growing over a muddy or peaty substrate, as well as rice crops (Marchant and Higgins 1990: DCCEEW, 2022a).

In Western Australia, the Australasian Bittern was formerly widespread in the south-west, ranging north to Moora, east to near Mount Arid, and inland possibly as far as the Toolibin Lake area. However, following range declines throughout the 1900s, it is now likely that it only occurs on the western coastal plain between Lancelin and Busselton, in the southern coastal region from Augusta to the east of Albany and inland to some wetlands in the Jarrah forest belt, with small, isolated populations in swamps from west of Esperance eastwards to near Cape Arid (TSSC, 2019). Although the application area provides suitable habitat for Australasian bittern, the location is now outside the species current range. According to available databases, the latest record of an Australasian Bittern in the local area was in the 1980s. In the unlikely case the species is found at the site at the time of the clearing taking place, fauna management conditions on the permit will mitigate potential impacts to individuals of this species.

Rostratula australis (Australian painted snipe) (EN/MI)

Australian painted snipe is a stocky wading bird, usually found in permanent or temporary shallow inland wetlands, either freshwater or occasionally brackish, both ephemeral and permanent, such as lakes, swamps, claypans, inundated or waterlogged grassland/saltmarsh, dams, rice crops, sewage farms and bore drains, generally with a good cover of grasses, rushes and reeds, low scrub, *Muehlenbeckia* spp. (lignum), open timber or samphire (Marchant and Higgins, 2003). However, according to the species' National Recovery Plan, due to the highly secretive behaviour and concealing habitats commonly used, the specific habitat requirements of the Australian painted snipe are much less well known than for most other Australian waterbirds (DCCEEW, 2022b).

The Australian painted snipe is also listed as a marine species (as *Rostratula benghalensis*) and a migratory species (under the China-Australia Migratory Bird Agreement as *Rostratula benghalensis*) under the EPBC Act.

The Australian painted snipe is inferred to have undergone a severe decline in the number of mature individuals since the 1950s, and it is estimated that the species' current population is 2500 mature individuals (DSEWPC, 2013). According to available databases, there are seven records in the local area spanning three decades, with the latest record in 2008. Due to the severe decline in population over the past half a century, the lack of records in the local area in recent years, and the small predicted overall population of the species, it is unlikely that individuals will be present in the area proposed to be cleared. In the unlikely case the species is found at the site at the time of the clearing taking place, fauna management conditions on the permit will mitigate potential impacts to individuals of this species.

Botaurus dubius (Australian little bittern) (P4/MI)

The Australian little bittern occurs in diverse freshwater habitats, mainly where tall rushes, reeds, *Typha*, shrub thickets or other dense cover is inundated by at least 30 centimetres of water. It can be found in vast swamps, but unlike the Australasian bittern, it often inhabits small patches of dense wetland vegetation such as *Typha* along drains or in small urban lakes (Marchant and Higgins 1990: Birdlife Australia, 2026). They are not much larger than a small rail, and tend to prefer to remain within or on the edge of wetland vegetation. It is a migratory species in the southern part of its range. The breeding season of the Australian Little Bittern occurs from mid-October to late January (Birdlife Australia, 2026).

According to available databases, within the local area there are six historical records of sightings of Australian little bittern, dating back to the earliest in 1982, with the latest record in mid-2009. According to Birdlife Australia (Birdlife Australia, 2026), more information is needed regarding the populations in the wetlands around the Ord River.

Due to the habitat preferences of the Australian little bittern, their small stature, preference to remain hidden, the lack of information of populations in the local area and the availability of many locations within the application footprint that contain the preferred habitat of the species, there is a likelihood that individuals may be present at the time of clearing. Conditions on the permit of pre-clearance fauna inspections, and directional clearing, will mitigate potential impacts to individuals of this species that may be present at the time of clearing.

Other Species:

Hydromys chrysogaster (water-rat, rakali) (P4)

The water-rat, rakali is a Priority 4 species with 18 records in the local area, the closest record of a rakali noted 490 metres from the application footprint in 2008. Rakali are amphibious or semiaquatic mammals reaching up to 70 centimetres in length (from nose to end of the tail) and occupy habitats in the vicinity of permanent water, be this fresh, brackish or marine. In the south-west of WA they have been shown to prefer areas with riparian vegetation, better water quality and a degree of habitat complexity. Woody debris, rock ledges and wetland islands are likely to be important areas for feeding and refuge. The rakali is widely distributed around Australia as well as Papua New Guinea and some adjacent islands. It occurs in fresh, brackish-water and coastal habitats in the south-west and Kimberley's of WA, though also occurs in marine environments along the Pilbara coastline and offshore islands (DEC, 2012).

Rakali are predominantly carnivorous, feeding largely underwater on a wide range of prey including large insects, crustaceans, mussels and fishes, and even frogs, lizards, small mammals and water birds. Although dependent on water for foraging, rakali live on land, in burrows on low banks of rivers, lakes, wetlands, and estuaries including coastal areas and nest in bankside hollow logs but can utilise artificial nests. Intact riparian vegetation and associated bank stability is critical to their survival, and therefore, stands of *Typha* are important to ensure stability for their riparian zone habitats and often utilised for shelter and to safe traverse the landscape (DWER, 2021). While no records are located within the application footprint, individuals may be present at the time of clearing, as the home range of rakali in the southern coastal areas of WA have been recorded up to seven to 10 hectares, though these figures may vary for the Kimberley (DEC, 2012).

The clearing activities may impact on the stability of the riverbank and subsequently impact on the rakali habitat. However, considering the small extent of clearing area, the existence of similar quality habitat in adjacent remnant vegetation along the river, and the applicant's commitments on avoidance, minimisation and mitigation measures, it is unlikely the proposed clearing will significantly impact the habitat of this species.

Chelodina kuchlingi (Kuchling's snake-necked turtle) (CR)

This species is associated with freshwater wetlands and slow-moving waters. Habitats containing *Typha* provide structure and shelter for this turtle species.

Suitable habitat may occur within the broader environment, however, the proposed clearing is unlikely to result in a significant impact to the species, given the limited scale of clearing and availability of similar habitat in adjacent areas.

Crocodylus johnstoni (freshwater crocodile)

The freshwater crocodile is a small to medium-sized crocodile endemic to Australia occurring only in the tropics (Webb and Manolis, 1989; Hale and Morgan, 2010). The freshwater crocodile prefers upstream freshwater areas and is found in rivers, billabongs and lakes. Although young males may be nomadic (Tucker, 1997; Kay, 2004) adults rarely move outside their home river system (Tucker, 1997).

According to available databases, the closest record to the application area is 130 metres away and there are 21 records of the species in the local area. However, according to CALM (CALM, 2003) in the 2003 management plan for crocodiles in WA, the total population estimates are more than 7500 in Lake Kununurra (CALM, 2003). However, complete census of populations is not feasible for annual monitoring, so the limits of acceptable change are based on annual helicopter surveys 1989 to 2007 (mean minus standard deviation); Lake Kununurra 208 ± 67 (CALM, 2003). As a result, it is possible that the population of freshwater crocodile are higher than records indicate.

Freshwater crocodiles utilise fringing emergent vegetation, including *Typha*-dominated habitats, as habitat for refuge, foraging and thermoregulation within lacustrine systems such as Lake Kununurra. Dense *Typha* provides cover and shelter, particularly for juveniles and subadults, reducing predation risk and intraspecific interactions. Vegetated margins also support ambush foraging, with crocodiles exploiting the interface between open water and vegetation where prey densities are typically higher. These areas additionally provide shaded microhabitats adjacent to basking sites, facilitating behavioural thermoregulation. Juveniles are typically associated with sheltered vegetated edges where hydraulic disturbance is reduced and food resources are more abundant. Freshwater crocodiles in the Ord

River system are closely associated with permanent waterbodies and shoreline habitat structure, with vegetation influencing local distribution and habitat use (Mawson 2004; Hale et al. 2010).

Although the areas in which clearing will occur will impact the freshwater crocodile on a small scale, due to the loss of refuge habitat, particularly affecting juveniles, the reduction of prey availability in littoral zones, and an increased exposure and disturbance along shorelines, due to the avoidance and mitigation measures committed to by the applicants, and the vast habitat available surrounding that represents similar features, the clearing is unlikely to have a significant impact on the survival of the species. In the likelihood that individuals are present at the time of clearing, fauna management conditions on the permit will mitigate potential impacts to individuals of this species.

Conclusion

Based on the above assessment the application area may provide suitable habitat for several migratory bird species, and other conservation significant fauna species. Fauna management conditions, including requirement for fauna inspections to be undertaken prior to works commencing and ongoing during works, and the requirement to undertake slow directional clearing, will minimise impacts to individuals. The applicant will be required to obtain an authorisation from the Minister for Environment under section 40 of the BC Act obtained from the DBCA for the translocation of any threatened fauna species.

Conditions

To address the above impacts, the following management measures will be required as conditions on the clearing permit:

- prior to undertaking any clearing, the area authorised to clear must be inspected for any native fauna that may be present. Should fauna be identified, clearing activities must cease until the fauna have escaped into adjacent habitat, or translocated into native vegetation, ahead of any clearing activity commencing.
- slow directional clearing to allow any fauna present at the time of clearing, time to move into adjacent vegetation ahead of the clearing activity, to minimise impact to individuals.

3.2.2. Biological values (flora) - Clearing Principle (a) and (c)

Assessment

The local area from the area proposed to be cleared supports a diverse assemblage of wetland, riparian and adjacent floodplain flora, including two Threatened flora taxa (*Typhonium* sp. Kununurra (A.N. Start ANS 1467) and *Lazarum* sp. Kununurra (A.N. Start ANS 1467)) and numerous Priority-listed species, according to available databases.

While two Threatened flora taxa and numerous Priority-listed species have been recorded from the broader locality, these species are generally associated with discrete microhabitats within riparian and floodplain environments and are not expected to occur within dense *Typha*-dominated areas, which are characterised by prolonged inundation and reduced floristic diversity due to competitive exclusion.

The Threatened and Priority flora recorded from the local area are generally associated with specific microhabitats within riparian and floodplain environments, including creeklines, levee margins and seasonally inundated soils. These habitat types are typically distinct from dense *Typha*-dominated areas, which are characterised by prolonged inundation and high competition (Sterling Environmental, 2026). As such, the likelihood of Threatened or Priority flora occurring within the areas proposed to be cleared is low.

The proposed clearing is targeted toward *Typha*-dominated vegetation and is not expected to result in the direct loss of Threatened or Priority flora. Furthermore, where undertaken in a selective and staged manner, clearing of *Typha* may maintain or improve local floristic diversity by increasing habitat heterogeneity and enabling recruitment of a broader range of native species.

The proposed clearing is targeted and intended to manage the extent of *Typha* to maintain a balance between open water and fringing vegetation. Where implemented appropriately, selective removal of *Typha* is unlikely to result in the loss of conservation significant flora and may improve habitat heterogeneity and ecological function.

Conclusion

Given the above, the proposed clearing of *Typha* is not likely to impact conservation significant flora.

Conditions

No flora management conditions recommended.

3.2.3. Biological values (ecological community) - Clearing Principle (a)

Assessment

The application area intersects with the Priority Ecological Community (PEC) (P3) Ivanhoe Land System (IvanhoeLS01), which is associated with the Ord River floodplain. This PEC represents a broad land system comprising a range of riparian, floodplain and wetland vegetation types.

As the proposed clearing relates to the removal of *Typha spp.*, a native, disturbance-responsive aquatic species that has proliferated within the Lake Kununurra and Lily Creek Lagoon system under altered hydrological and nutrient conditions, which typically occurs as dense monocultures along shallow margins (Sterling Environmental, 2026), it is not considered to be a defining or diagnostic component of the Ivanhoe Land System PEC. In addition, dense stands of overgrown *Typha* may reduce floristic diversity and modify vegetation structure, limiting the representation of more typical riparian and wetland assemblages, which may represent the PEC.

Based on the proposed clearing being targeted and intended to manage the extent of *Typha* to maintain a balance between open water and fringing vegetation. Where implemented appropriately, selective removal of *Typha* is unlikely to result in the loss of native vegetation communities characteristic of the PEC and may improve habitat heterogeneity and ecological function.

Conclusion

Given the above, the proposed clearing of *Typha* is not likely to significantly impact the extent, composition or function of the Ivanhoe Land System PEC. However, a weed control condition on the permit will mitigate any potential impacts that may occur to the PEC during clearing.

Conditions

To address the above impacts, the following management measures will be required as conditions on the clearing permit:

- take hygiene steps to minimise the risk of the introduction and spread of weeds to adjacent vegetation.

3.2.4. Environmental value (conservation area) - Clearing Principle (h)

Assessment

Of the original 1693.4 hectares of the application footprint, approximately 845.59 hectares (based on Landgate land tenure GIS layer) of the area contains the Darram Conservation Park (R 50438), which is vested with Conservation Commission of WA and Yawoorrong Miriuwung Gajerrong Yirrgeb Noong Dawang Aboriginal Corporation for management, for the purpose of Conservation and Traditional Aboriginal Uses.

Advice received from DBCA indicated that *Typha* stands in Darram Conservation Park provide important habitat for native fauna, contributes to runoff filtration, and supports riverbank stability (DBCA, 2026). Support was received for a trial of specialist equipment designed to remove *Typha* from three areas of the Lake Kununurra riparian zone designated for proposed day-use development (DBCA, 2026). However, due to the significant impact on environmental values of clearing within the wider conservation park, DBCA recommended that clearing of *Typha* only occurs in areas that are of high priority (DBCA, 2026).

To align with this expert advice, and to ensure the conservation and preservation of important habitat for native fauna the conservation park has been excluded from the application footprint. Three locations within the riparian zone of the western bank of Lake Kununurra, in addition to the surface water abstraction sump area located along Packsaddle Rd (15.80°S, 128.69°E), have remained in the approved clearing area (see Section 1.5, Figure 1 and 2).

As a result of the revision of the application area, in combination with the avoidance and mitigation measures committed to by the applicants, the proposed clearing is unlikely to adversely impact the important features and functions of the conservation area.

Conclusion

For the reasons set out above, the impacts of the proposed clearing on the Darram Conservation Park can be managed by excluding the wider conservation park from the clearing footprint, implementing conditions to avoid and minimise the extent of the clearing, requiring fauna inspections to be undertaken prior to works commencing and ongoing during works, taking steps to minimise the risk of the introduction and spread of weeds, and undertaking slow directional clearing to allow fauna to move out of the clearing area into adjacent native vegetation.

Conditions

To address the above impacts, the following management measures will be required as conditions on the clearing permit:

- avoidance and minimisation to reduce the impacts and extent of clearing.
- prior to undertaking any clearing, the area authorised to clear must be inspected for any native fauna that may be present. Should fauna be identified, clearing activities must cease until the fauna have escaped into adjacent habitat, or translocation into native vegetation, ahead of any clearing activity commencing.
- take hygiene steps to minimise the risk of the introduction and spread of weeds to adjacent vegetation, and
- slow directional clearing to allow any fauna present at the time of clearing, time to move into adjacent vegetation ahead of the clearing activity, to minimise impact to individuals.

3.2.5. Environmental value (land and water resources) - Clearing Principle (f) and (i)

Assessment

The application area contains several significant wetlands and waterways, in addition to the area being located within the Ord River catchment which is proclaimed under the RIWI Act as a surface water and irrigation district, and a proclaimed groundwater area.

As the application area also intercepts Kununurra (Priority 1) Public Drinking Water Source Area (PDWSA), it is expected that water management best practice is carried out during the clearing activities (DWER, 2025).

Hydrocarbons, chemicals, and potentially hazardous substances should be stored and disposed of in accordance with the Departments' Guidelines and Water Quality Protection Notes. These notes and guidelines provide recommendations on best practice measures to protect water resources. It is expected that best practice management is undertaken during the proposed clearing activities to manage the potential contamination risks to protect water resources (DWER, 2025).

It is recommended the following best management practices take place for this clearing, to best protect water quality and public health in the affected PDWSA. The clearing is recommended to occur consistent with:

- [WQPN 6: Vegetation buffers to sensitive water resources](#)
- [WQPN 10: Contaminant spills – emergency response plan](#)
- [WQPN 65: Toxic and hazardous substances](#)

The applicant must be aware of their obligations, as under section 11 of the *Contaminated Sites Act 2003* (CS Act), site owners, occupiers or a person who knows or suspects that they have caused or contributed to contamination must report the site to the department. If the applicant suspects a site to be contaminated it is to be reported as soon as reasonably practical, however, if the applicant knows a site is contaminated it must be reported within 21 days of the applicant first being aware of the contamination. Failure to do so is considered an offence under the CS Act.

Noting the definition of this principle, the proposed clearing is at variance with this principle. *Typha* forms a natural component of native wetland and watercourse vegetation. However, *Typha* can dominate wetland ecosystems. Given the nature of the proposed clearing, including the avoidance and mitigation measures considered, and provided the above guidance is applied, it is unlikely to significantly impact wetlands or watercourses.

Conclusion

For the reasons set out above, the impacts of the proposed clearing are unlikely to significantly impact wetlands or watercourses within the application area. The implementation of conditions on the permit to avoid and minimise the extent of the clearing, and to take steps to minimise the risk of the introduction and spread of weeds, will mitigate any additional impacts the clearing may have on the ecosystem.

Conditions

To address the above impacts, the following management measures will be required as conditions on the clearing permit:

- avoidance and minimisation to reduce the impacts and extent of clearing, and
- take hygiene steps to minimise the risk of the introduction and spread of weeds to adjacent vegetation.

3.3. Relevant planning instruments and other matters

Other relevant authorisations required for the proposed land use include:

- The proposed clearing is located within the proclaimed Canning and Kimberley Groundwater, and Ord River and Tributary Surface Water areas, which is subject to licensing requirements under the RIWI Act. The Shire currently holds an active permit for the modification of the bed and banks of the Ord River for the removal of *Typha* (cumbungi) from the river banks and jetty within the Lily Creek Lagoon (PMB200524(1)). Additional permits under Section 17 to grant authority to modify the bed and banks will be required prior to clearing taking place in other locations within the clearing footprint.
- Access to Darram Conservation Park to undertake activities specified in the Clearing Permit and Plan (also see Figure 1 and 2 of this report for the locations), will require lawful authority under the CALM Act (Regulation 4) prior to any clearing activities taking place which have been granted as part of CPS 11306/1. Applications for lawful authority can be sought from DBCA's East Kimberley District Office (DBCA, 2026).

DBCA are supportive of the proposed clearing and ongoing management of *Typha* in the surface water abstraction sump area associated with Water Licence No.169488 (15.80°S,128.69°E) (DBCA, 2026). 2026 regarding *Typha* management within Darram Conservation Park. DBCA support a trial of specialist equipment designed to remove *Typha* from areas of Lake Kununurra's riparian zone designated for proposed day-use development. DBCA does not support the wider removal of *Typha* from the reserve, as the species provides important habitat for native fauna, contributes to runoff filtration, and supports riverbank stability (DBCA, 2026).

Several Aboriginal Cultural Heritage sites have been mapped within the application footprint. It is the permit holder's responsibility to comply with the *Aboriginal Heritage Act 1972 (WA)* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

End

Appendix A. Additional information provided by applicant

Summary of comments	Consideration of comment
Additional photographs of areas requiring urgent clearing (Hydroscape Environmental, 2026).	The additional information received was taken into consideration with respect to requesting priority of the assessment and necessity of the clearing.
The revised DRAFT Vegetation Management Plan was received (Sterling Environmental, 2026).	The amended information within the revised version of the DRAFT Vegetation Management Plan was considered when considering the avoidance and mitigation measures proposed by the applicants in Section 3.1. of this report, and whilst undertaking the detailed assessment in Section 3.2. of this report.

Appendix B. Site characteristics

B.1. Site characteristics

The information provided below describes the key characteristics of the area proposed to be cleared and is based on the best information available to the department at the time of this assessment. This information was used to inform the assessment of the clearing against the Clearing Principles, contained in Appendix C.

Characteristic	Details
Local context	<p>The areas proposed to be cleared are select locations within the inland portions of Lily Creek Lagoon, adjacent to Kimberleyland Caravan Park, Lily Lagoon Resort, westwards towards the Ord River in around Lily Creek Lagoon Discovery Parks Caravan Park, North West along the Order River up until the Kununurra Diversion Dam upstream alongside Packsaddle Road towards Maxwell Creek. The area is part of an expansive tract of native and riparian vegetation associated with Lake Kununurra and, within the extensive land use zone of Western Australia associated with the Kununurra township and Ord Irrigation Area.</p> <p>Spatial data indicates the local area (50-kilometre radius from the centre of the area proposed to be cleared) retains approximately 84.7 per cent of the original native vegetation cover.</p>
Ecological linkage	<p>The application area forms part of a broader riparian and wetland ecological linkage associated with the Ord River, Lake Kununurra and Lily Creek Lagoon. These waterways and fringing vegetation provide continuous habitat and movement corridors for waterbirds, semi-aquatic fauna, reptiles and other wetland-dependent species.</p> <p>The riparian vegetation, including areas dominated by <i>Typha</i>, contributes to regional ecological connectivity, supporting local and migratory fauna and linking adjacent conservation areas, including Darram Conservation Park and Mirima National Park. The linkage function is recognised through the Ramsar listing of the Lakes Argyle and Kununurra wetland system.</p> <p>The entire application footprint area is mapped as high potential Terrestrial Ground Dependent Ecosystems (UFI 775831, 776057 and 776035), except for two relatively small areas of the footprint equating to approximately 10.26 hectares mapped as moderate potential (UFI 775867).</p>
Conservation areas	<p>The application footprint overlaps the Darram Conservation Park (R 50438) which 878.3 hectares. Mirima National Park (R 37883) is also located approximately 450 metres to the northeast of the application area. There are several large conservation parks within the local area.</p>
Vegetation description	<p>Supporting information provided by the applicant, contained within the Lake Kununurra and Lily Creek Lagoon Draft Vegetation Management Plan (Sterling Environmental, 2026), and previous vegetation investigations indicate that vegetation within the proposed clearing area consists primarily of riparian and wetland vegetation typical of the Ord River system. To summarise the vegetation, it was described as assemblages dominated by <i>Typha domingensis</i>, with associated species such as <i>Pandanus aquatica</i> (pandanus), <i>Sesbania formosa</i> (dragon tree), <i>Eucalyptus camaldulensis</i> (river red gum),</p>

Characteristic	Details
	<p><i>Melaleuca</i> spp. (paperbarks), and other fringing woodland and shrubland species occurring landward of the wetland edge (Sterling Environmental, 2026).</p> <p>This vegetation is not consistent with the mapped vegetation community for the area proposed to be cleared, which is indicated by available databases and detailed in additional supporting information provided by the applicant (Hydroscape Environmental, 2025). The application area is located within the Victoria Bonaparte bioregion and includes dissected plateaus and alluvial plains and a number of river basins. Eucalypt woodlands are the dominant vegetation community. The Phanerozoic strata of the Bonaparte Basin in the north-western part are mantled by Quaternary marine sediments supporting Samphire - Sporobolus grasslands and mangal, and by red earth plains and black soil plains with an open savannah of high grasses. Plateau and abrupt ranges of Proterozoic sandstone, known as the Victoria Plateau, occur in the south and east, and are partially mantled by skeletal sandy soils with low tree savannahs and hummock grasslands. In the southeast are limited areas of gently undulating terrain on a variety of sedimentary rocks supporting low snappy gum over hummock grasslands and also of gently sloping floodplains supporting <i>Melaleuca minutifolia</i> low woodland over annual sorghums (Hydroscape Environmental, 2025).</p> <p>The mapped vegetation types associated with this system retain a high proportion of their original extent at a regional scale, given their association with permanent waterbodies and conservation reserves.</p>
Vegetation condition	<p>The application footprint covers a vast area, representing a variety of vegetation communities and is utilised by humans and fauna to varying extents, creating a wide range of vegetation condition ratings amongst the locations.</p> <p>The VMP refers to the historical surveys conducted in 2008, based on the data being collected from transects and quadrats which were then interpreted using a modified Vegetation Condition Scale (see Appendix D). This scale used both quantitative and qualitative assessment procedures to describe the state of the vegetation in a particular location. The VMP has separated the application footprint into Land Management Units (LMU) and recommended future surveys to monitor vegetation condition.</p> <p>In additional supporting information provided by the applicants, the structure of the vegetation is described as severely disturbed (with reference to the Keighery scale (Keighery, 1994) with appropriate management required through intensive management measures based on the Keighery scale (Hydroscape Environmental, 2025).</p>
Climate and landform	<p>Located in the dry tropics with a semi arid, monsoonal climate. Eighty percent of rainfall occurs in the wet season (December to February). On average evaporation exceeds rainfall in 11 months of the year (Hale and Morgan, 2010).</p> <p>The application area is located within the Ivanhoe Land System, which spans approximately 1239 km². It is characterised by many small to medium areas of gently sloping alluvial 'black soil' plains with some timbered 'red' soil in the central and northern parts of the Ord-Victoria area (Hydroscape Environmental Payne 2011). Landforms are generally low-lying, gently sloping floodplain and riparian terraces associated with Lake Kununurra and Lily Creek Lagoon, with localised levee banks and modified shorelines resulting from dam construction and irrigation infrastructure.</p>
Soil description	<p>Based on the Soil Landscape Mapping – Best Available information data layer, soils within the application area are mapped as the Soil System 711lv – Ivanhoe System, which is described as alluvial flood plains with black cracking clay soils supporting blue grass grasslands and minor eucalypt woodlands with frontage tall grasses. These soils are described as:</p> <ul style="list-style-type: none"> • Dark, fertile, and fine-textured. • Subject to periodic inundation. • Susceptible to disturbance and erosion if vegetation cover is removed.
Land degradation risk	<p>According to the VMP, the land degradation risk factors relevant to the area include:</p> <ul style="list-style-type: none"> • Erosion risk, particularly along riparian banks where vegetation is disturbed. • Sediment and nutrient export into Lake Kununurra and Lily Creek Lagoon. • Localised weed invasion following disturbance.

Characteristic	Details
	<ul style="list-style-type: none"> Potential degradation of water quality associated with vegetation removal. <p>These risks emphasise the role of riparian vegetation in bank stability, sediment trapping and nutrient filtering.</p> <p>See Appendix B.5 for a full analysis of soil risks, based on the mapped soil system of the application area.</p>
Waterbodies	<p>A desktop assessment and aerial imagery confirm that the application area is directly associated with Lake Kununurra and Lily Creek Lagoon, both of which are permanent freshwater waterbodies.</p> <p>Lake Kununurra was formed by damming of the Ord Diversion Dam at Kununurra and comprises the drowned river channel and fringing swamps formed by flooding of surrounding dryland (Packsaddle, Lily Creek, Emu Creek and Everglades Swamps). The lake extends upstream to the Lake Argyle Dam (Ord Main Dam) (DWER, 2025).</p> <p>Wetlands within the application footprint, which have been listed in the Directory of Important Wetlands of Australia – Western Australia, include:</p> <ul style="list-style-type: none"> Lake Argyle (WA097) Ord Estuary (WA099) Parry Floodplain (WA100). <p>Lake Kununurra and Lily Creek Lagoon are listed under the Convention on Wetlands of International Importance (Ramsar Convention) as part of the ‘Lakes Argyle and Kununurra’ Ramsar site (Western Australia site no. 32) and are therefore afforded protection under both State and Commonwealth legislation.</p>
Hydrogeography	<p>The area proposed to be clearing falls within the Ord River catchment and is proclaimed under the RIWI Act as a surface water and irrigation district (the Ord Irrigation District – UFI 12, and Ord River and Tributaries Surface Water Area – UFI 25), and a groundwater area (Canning-Kimberley Groundwater Area – UFI 38).</p> <p>The application footprint overlaps with Kununurra’s (Priority 1) Public Drinking Water Source Area (PDWSA) associated with Kununurra’s potable water supply.</p>
Flora	<p>The margins of Lily Creek Lagoon and the Ord River are densely vegetated, featuring a variety of plant species (Hale and Morgan, 2010). Aquatic plants are abundant, contributing to the lagoon’s healthy wetland environment.</p> <p>According to available databases there are 93 records of conservation significant flora in the local area, two of which are listed under State and Federal conservation Acts, and 91 of which are listed as Priority flora (51 are listed as Priority 1, 14 are listed as Priority 2, 22 are listed as Priority 3, and 4 are listed as Priority 4).</p> <p>The only conservation significant flora records within the application area are located within Darram Conservation Park.</p>
Ecological communities	<p>According to available databases, over 81 per cent of application footprint is mapped as the Priority Ecological Community - IvanhoeLS01 - Ivanhoe Land System, which is listed as Priority 3 under the BC Act.</p>
Fauna	<p>There are records of 62 fauna of conservation significance within the local area, with eight of these fauna species’ closest record occurring within the application footprint. Of these eight species, only three have habitat and vegetation type preferences compatible with the proposed clearing.</p> <p>Of the 62 conservation significant fauna species recorded within the local area, 48 are gazetted under Part 2 of the BC Act (five species are critically endangered, eight species are endangered, two species are vulnerable, 31 species are migratory and two species are other specially protected species) and 14 are listed as Priority species (two of which are priority one, two species are priority two, one species is priority three and nine species are priority four).</p> <p>There is a likelihood that several habitats within the application footprint, including those areas likely to be cleared, are utilised by conservation significant fauna which occur in the local area.</p>

B.2. Fauna analysis table

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
<i>Actitis hypoleucos</i> (common sandpiper)	MI	Y	Y	within application footprint	148	N/A
<i>Botaurus dubius</i> (Australian little bittern)	P4	Y	Y	within application footprint	6	N/A
<i>Botaurus poiciloptilus</i> (Australasian bittern)	EN	Y	Y	3.40	2	N/A
<i>Crocodylus johnstoni</i> (freshwater crocodile)	OS	Y	Y	0.13	21	N/A
<i>Gallinago megala</i> (Swinhoe's snipe)	MI	Y	Y	1.66	11	N/A
<i>Hydromys chrysogaster</i> (water-rat, rakali)	P4	Y	Y	0.49	18	N/A
<i>Motacilla flava</i> (yellow wagtail)	MI	Y	Y	1.66	2	N/A
<i>Plegadis falcinellus</i> (glossy ibis)	MI	Y	Y	within application footprint	236	N/A
<i>Rostratula australis</i> (Australian painted snipe)	EN	Y	Y	3.40	7	N/A
<i>Spatula querquedula</i> (garganey)	MI	Y	Y	3.40	1	N/A
<i>Tringa glareola</i> (wood sandpiper)	MI	Y	Y	0.37	79	N/A
<i>Tringa nebularia</i> (common greenshank)	MI	Y	Y	0.90	22	N/A
<i>Tringa stagnatilis</i> (marsh sandpiper)	MI	Y	Y	0.37	36	N/A

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority

B.3. Land degradation risk table

Risk categories	711lv - Ivanhoe System
Wind erosion	~ 99% of map unit has a very high to extreme hazard
Water erosion	~ 99% of map unit has a very high to extreme hazard
Water Repellence	0% of map unit has a high susceptibility
Site Drainage Potential	~ 99% of map unit has very poor to poor potential
Salinity	~ 99% of map unit has a moderate hazard
Subsurface Acidification	0% of map unit has a high susceptibility
Flood risk	~ 99% of the map unit has a moderate to high hazard
Water logging and Inundation	~ 99% of map unit has a moderate to very high risk
Phosphorus export risk	~ 99% of map unit has a high to extreme hazard

(DPIRD, 2019)

Appendix C. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
<p><u>Principle (a):</u> <i>“Native vegetation should not be cleared if it comprises a high level of biodiversity.”</i></p> <p><u>Assessment:</u></p> <p>The area proposed to be cleared contains conservation significant fauna and non-critical habitat for these species and is mapped as a priority ecological community.</p>	May be at variance	Yes <i>(Refer to Section 3.2.1, Section 3.2.2, and Section 3.2.3 above.)</i>
<p><u>Principle (b):</u> <i>“Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna.”</i></p> <p><u>Assessment:</u></p> <p>The area proposed to be cleared contains non-critical foraging, breeding and/or roosting habitat for conservation significant fauna.</p>	At variance	Yes <i>(Refer to Section 3.2.1, above.)</i>
<p><u>Principle (c):</u> <i>“Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.”</i></p> <p><u>Assessment:</u></p> <p>The area proposed to be cleared is unlikely to contain flora species listed under the BC Act. There are no known occurrences of conservation significant flora within the application area. As the proposed clearing will be restricted to <i>Typha</i> sp. and all other native vegetation avoided, it is unlikely that the proposed clearing is at variance with principle (c).</p>	Not likely to be at variance	Yes <i>(Refer to Section 3.2.2, above.)</i>
<p><u>Principle (d):</u> <i>“Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community (TEC).”</i></p> <p><u>Assessment:</u></p> <p>The vegetation proposed to be cleared is not consistent with any known TEC.</p>	Not likely to be at variance	No
Environmental value: significant remnant vegetation and conservation areas		
<p><u>Principle (e):</u> <i>“Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.”</i></p> <p><u>Assessment:</u></p> <p>The extent of the native vegetation in the local area is consistent with the national objectives and targets for biodiversity conservation in Australia for constrained areas.</p>	Not at variance	No
<p><u>Principle (h):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.”</i></p> <p><u>Assessment:</u></p> <p>Given the proposed clearing overlaps with the Darram Conservation Park, it is like to have an impact on the environmental values of the conservation area.</p>	At variance	Yes <i>Refer to Section 3.2.4, above.</i>
Environmental value: land and water resources		

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Principle (f):</u> <i>“Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</i></p> <p><u>Assessment:</u></p> <p>The application area is within several watercourses and wetlands, some of which have international significance.</p> <p>Noting the definition of the principle, the proposed clearing is at variance with this principle.</p> <p><i>Typha</i> forms a natural component of native wetland and watercourse vegetation. However, <i>Typha</i> can dominate wetland ecosystems. Given the nature of the proposed clearing, including the avoidance and mitigation measures considered, it is unlikely to significantly impact wetlands or watercourses.</p>	At variance	<p>Yes</p> <p><i>Refer to Section 3.2.5, above.</i></p>
<p><u>Principle (g):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</i></p> <p><u>Assessment:</u></p> <p>The mapped soils are moderately to highly susceptible to wind and water erosion, nutrient export, salinity, flooding, inundation and waterlogging. Noting the location of the application area is with and on the banks of waterbodies, the proposed clearing is not likely to have an appreciable impact on land degradation.</p>	Not likely to be at variance	No
<p><u>Principle (i):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.”</i></p> <p><u>Assessment:</u></p> <p>The removal of <i>Typha</i> may increase water turbidity. However, these impacts are likely to be minimal and short term.</p> <p>The application area overlaps with a Priority 1 Public Drinking Water Source Area, and a river, surface water area, irrigation district and groundwater area all proclaimed under the RiWI Act.</p>	May be at variance	<p>Yes</p> <p><i>Refer to Section 3.2.5, above.</i></p>
<p><u>Principle (j):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</i></p> <p><u>Assessment:</u></p> <p>In addition to improving wetland habitats, the purpose of the proposed clearing is to improve water flow, by monitoring and removing dense stands of <i>Typha</i>. Therefore, the proposed clearing is unlikely to contribute to waterlogging or increase incidence of flooding.</p>	Not likely to be at variance	No

Appendix D. Vegetation condition rating scale

Vegetation condition is a rating given to a defined area of vegetation to categorise and rank disturbance related to human activities. The rating refers to the degree of change in the vegetation structure, density and species present in relation to undisturbed vegetation of the same type. The degree of disturbance impacts upon the vegetation's ability to regenerate. Disturbance at a site can be a cumulative effect from a number of interacting disturbance types.

The vegetation condition for the application area was provided within the VMP, which used a modified Vegetation Condition Scale as presented below. This scale uses both quantitative and qualitative assessment procedures to describe the state of the vegetation in a particular area (Sterling Environmental, 2026).

Table 1 – Vegetation Condition Scale (Adapted from Trudgen, 1991)

Condition	Description
Good – Very Good	<ul style="list-style-type: none"> • 80-100% native flora composition • Vegetation structure intact or nearly so • Cover/abundance of weeds less than 5% • No or minimal signs of disturbance
Fair - Good	<ul style="list-style-type: none"> • 50-80% native flora composition • Vegetation structure modified • Cover/abundance of weeds • 5-20% Minor signs of disturbance
Poor	<ul style="list-style-type: none"> • 20 – 50% native flora composition • Vegetation structure completely modified • Cover/abundance of weeds 20-60% • High level of disturbance
Very Poor	<ul style="list-style-type: none"> • 0-20% native flora composition • Vegetation structure disappeared • Cover/abundance of weeds 60-100% • Very high level of disturbance

Appendix E. Biological survey information excerpts / Photographs of vegetation



Figure 3: Photographs of *Typha* overgrown in the boat ramp and Lily Creek Lagoon area, which are key tourist and community areas which both locals and tourist providers access to enjoy the Lily Creek area and surrounds (Hydroscape Environmental, 2026).

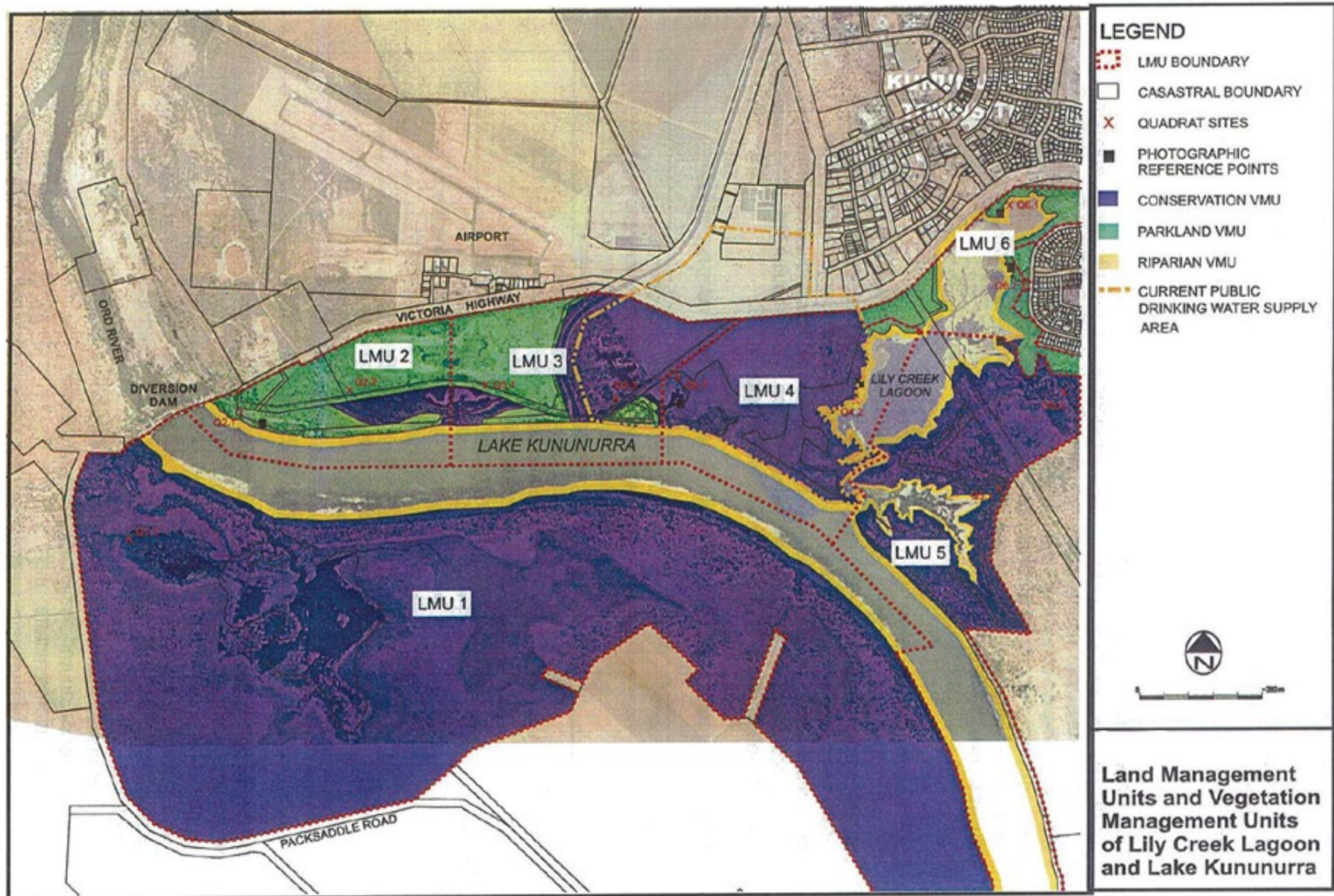


Figure 4: Land Management Units and Vegetation Management Units of Lily Creek Lagoon and Lake Kununurra (Sterling Environmental, 2026).

Example of the use of the Truxor machinery in the East Kimberley in 2024 - Before and after photos



Figure 5: Before the clearing of weeds in channel - the waterway channel has minimal flow, weeds impeding flow and the commencement of eutrophication to the channel. The Truxor operator has clear visuals to identify any fauna or flora species within the direct clearing channel (Hydroscape Environmental, 2025).



Figure 6: During the removal of weed cuttings in channel - removal of weed cuttings has left minimal weed material in the waterway, improving water quality and flow immediately (Hydroscape Environmental, 2025).



Figure 7: Before the clearing of weeds in channel - minimal disturbance to before and after of the channel bank with minimal sedimentation and erosion to the foreshore area. Also notice the selective removal of the weeds, keeping vegetation along the foreshore areas to ensure bank stability (Hydroscape Environmental, 2025).

Appendix F. Sources of information

F.1. GIS databases

Publicly available GIS Databases used (sourced from www.data.wa.gov.au):

- 10 Metre Contours (DPIRD-073)
- Aboriginal Heritage Places (DPLH-001)
- Aboriginal Heritage Places (DPLH-001)
- Cadastre (LGATE-218)
- Cadastre Address (LGATE-002)
- Contours (DPIRD-073)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- Environmentally Sensitive Areas (DWER-046)
- Flood Risk (DPIRD-007)
- Groundwater Salinity Statewide (DWER-026)
- Hydrography – Inland Waters – Waterlines
- Hydrological Zones of Western Australia (DPIRD-069)
- IBRA Vegetation Statistics
- Imagery
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Native Title (ILUA) (LGATE-067)
- Pre-European Vegetation Statistics
- Public Drinking Water Source Areas (DWER-033)
- Ramsar Sites (DBCA-010)
- Regional Parks (DBCA-026)
- Remnant Vegetation, All Areas
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Land Quality – Flood Risk (DPIRD-007)
- Soil Landscape Land Quality – Phosphorus Export Risk (DPIRD-010)
- Soil Landscape Land Quality – Subsurface Acidification Risk (DPIRD-011)
- Soil Landscape Land Quality – Water Erosion Risk (DPIRD-013)
- Soil Landscape Land Quality – Water Repellence Risk (DPIRD-014)
- Soil Landscape Land Quality – Waterlogging Risk (DPIRD-015)
- Soil Landscape Land Quality – Wind Erosion Risk (DPIRD-016)
- Soil Landscape Mapping – Best Available
- Soil Landscape Mapping – Systems

Restricted GIS Databases used:

- ICMS (Incident Complaints Management System) – Points and Polygons
- Threatened Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities
- Threatened Ecological Communities and Priority Ecological Communities (Buffers)

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